

WHAT IS CLAIMED IS:

1. An ice supply system for a refrigerator having a door, comprising:
an icemaker being provided within or next to the door of the refrigerator, the icemaker including:
 - an ice tray for receiving water;
 - an ejector being provided adjacent to the ice tray;
 - a motor for discharging ice in the ice tray by imparting a rotational motion to the ejector;
 - a dropper having an inclined surface and being provided at an upper part of the ice tray for discharging ice stored within the ice tray via the ejector to the upper part of the ice tray and downward along the inclined surface of the dropper; and
 - a overflow prevention device being provided on a side of the icemaker opposite from the dropper at an upper part of the ice tray for preventing water filled in the ice tray from overflowing out of the ice tray;
 - a container being provided under the icemaker and having an open top and an outlet for discharging the ice; and
 - an ice chute being provided to communicate the dispenser provided at the door with the outlet of the container.
2. The ice supply system according to claim 1, wherein the overflow prevention device is a panel extending upward from an upper end of the ice tray for a predetermined distance.
3. The ice supply system according to claim 2, wherein the panel comprises a concave surface facing toward an interior of the ice tray.
4. The ice supply system according to claim 3, wherein the ice tray is formed in a semi cylindrical shape, and the curved surface of the panel and the inner surface of the ice tray have a common radius of curvature.

5. The ice supply system according to claim 2, wherein the panel is vertically oriented with respect to the ice tray.

6. The ice supply system according to claim 1, wherein the dropper covers a portion of the ice tray extending upward from an upper end of the ice tray near a central axis of the ejector for preventing water from overflowing from the ice tray.

7. The ice supply system according to claim 6, wherein the dropper comprises a top plate having an inclined upper surface, and a side of the dropper adjacent to the central axis of the ejector is higher than an opposite side of the dropper.

8. The ice supply system according to claim 1, wherein the ice tray is formed in a semi-cylindrical shape and a central axis of the ejector is provided along a central axis of the ice tray.

9. The ice supply system according to claim 8, wherein the dropper is provided at a location offset from the central axis of the ice tray to a top portion thereof for a predetermined distance.

10. The ice supply system according to claim 1, further comprising a sensor provided at an end of the dropper for sensing a rotation angle of the ejector when the ejector is in contact with the sensor.

11. The ice supply system according to claim 1, wherein the motor selectively rotates in a forward direction or in a reverse direction.

12. The ice supply system according to claim 10, wherein the ejector rotates in a first direction from an initial position until the ejector contacts the sensor at a contact

position, and the ejector rotates in a reverse direction from the contact position until the ejector reaches the initial position.

13. The ice supply system according to claim 1, wherein the overflow prevention device comprises a cover coupled with a hinge at the upper part of the ice tray for covering an open top of the ice tray.

14. The ice supply system according to claim 13, wherein the cover covers the top of the ice tray and sealingly engages the top of the ice tray with the weight of the cover, and the cover opens the top of the ice tray by being pushed upward to an open position by the ejector.

15. The ice supply system according to claim 13, further comprising a spring coupled with the top of the cover, said spring providing a spring force to the cover to bias the cover in a closed position.

16. The ice supply system according to claim 13, further comprising a first gear assembly including:

- a first gear coupled with the motor; and

- a second gear being engaged with the first gear and being operatively coupled with a central rotational axis of the ejector.

17. The ice supply system according to claim 13, further comprising a second gear assembly rotating with the ejector and the hinge axis of the cover, wherein the cover opens or covers the ice tray according to a rotation of the ejector.

18. An icemaker for an ice supply system for a refrigerator, comprising:

- an ice tray for receiving water and making ice;

- an ejector being provided adjacent to and within the ice tray;

a motor for discharging ice in the ice tray by imparting a rotational motion to the ejector;

a dropper having an inclined surface and being provided at an upper part of the ice tray for discharging ice stored within the ice tray via the ejector to the upper part of the ice tray and downward along the inclined surface of the dropper; and

a overflow prevention device being provided on a side of the icemaker opposite from the dropper at an upper part of the ice tray for preventing water filled in the ice tray from overflowing out of the ice tray.

19. The icemaker according to claim 18, wherein the overflow prevention device comprises a cover coupled with a hinge at the upper part of the ice tray for covering an open top of the ice tray.

20. The icemaker according to claim 19, wherein the cover covers the top of the ice tray and sealingly engages the top of the ice tray with the weight of the cover, and the cover opens the top of the ice tray by being pushed upward to an open position by the ejector.

21. The icemaker according to claim 19, further comprising a spring coupled with the top of the cover, said spring providing a spring force to the cover to bias the cover in a closed position.

22. The icemaker according to claim 19, further comprising a first gear assembly including:

a first gear coupled with the motor; and

a second gear being engaged with the first gear and being operatively coupled with a central rotational axis of the ejector.

23. The icemaker according to claim 22, further comprising a second gear assembly rotating with the ejector and the hinge axis of the cover, wherein the cover opens or covers the ice tray according to a rotation of the ejector.

24. The icemaker according to claim 18, wherein the overflow prevention device is a panel extending upward from an upper end of the ice tray for a predetermined distance.

25. The icemaker according to claim 24, wherein the panel comprises a concave surface facing toward an interior of the ice tray.

26. The icemaker according to claim 18, wherein the dropper covers a portion of the ice tray extending upward from an upper end of the ice tray near a central axis of the ejector for preventing water from overflowing from the ice tray.

27. The icemaker according to claim 18, further comprising a sensor provided at an end of the dropper for sensing a rotation angle of the ejector when the ejector is in contact with the sensor.

28. The icemaker according to claim 18, wherein the motor selectively rotates in a forward direction or in a reverse direction.